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AUX

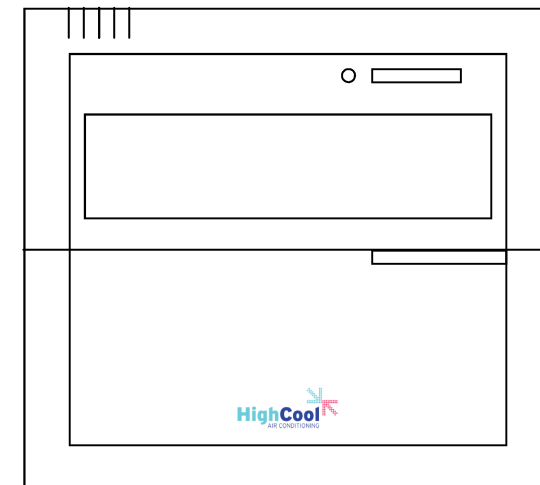
AUX

Highcool Series

Wired 7 Day Controller for Cassette Air Conditioner

Operation Manual

		
Read the Manual	Risk of Electric Shock	Unit is Remotely controlled & may start without warning
		
 WARNING		
<p>This air conditioner is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure they do not play with the air conditioner or remote controller.</p>		



Ref— AUX wired controller

INTRODUCTION

Highcool series cassette split systems are supplied as standard with the Wired 7 Day Controller.

This controller is a sophisticated device designed to provide easy operation to a Highcool series cassette split system.

At its simplest, with the front panel shut, the controller can be used to display relevant information about the units operation and allow the user to switch the unit on and off.

Opening the controller front panel allows all of the controllers functions to be accessed. Pressing any of the buttons below the front panel once gives User Level Access. Pressing and holding certain buttons will give Service Level Access.

At its most sophisticated the controller can switch the unit on or off at different times each day of the week (or not run the unit at all on some days). It can tell you what the unit is doing and whether it has a fault—even what that fault is!

This manual is designed to show how the 7 Day Wired Controller can be used to operate your Highcool cassette split system in order to get the most from it.

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Appendix 2

Notes for Engineer

- The controller is provided with special screws for fixing it to the wall. Please use these to avoid damaging the controller.
- The controller uses Low Voltage control cable—avoid running this close to High Voltage cables in order to avoid interference
- The controller uses the RS485 data protocol. The cable colours are Earth—Black, A—Green, B—Yellow, 12V—Red

Appendix 3

In order to assist with setting up the Weekly Timer you may use the table below in order to record the settings for each day.

Day	On Time	AM/PM	Off Time	AM/PM	ON/OFF
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Sunday					

Fault Code Log

In order to assist with the identification of any faults, please fill in the date, time, Fault Code and Action Taken for each time a fault code is displayed.

DATE	TIME	CODE	ACTION

Appendix 1

Fault Codes

The Error Check display area of the LCD display may, in the event of a fault, show the symbol of a spanner and a fault code. This is a list of fault codes in order for you to advise your service and maintenance engineer of the likely problem. Not all faults will generate a fault code. Faults are divided into two types as below.

Recoverable Errors—P Codes

These faults will not always stop the unit but will affect its performance. They will clear if the problem resolves itself.

Critical Errors—E Codes

These will cause the unit to shut down and should be investigated by an engineer as soon as possible.

Code	Type	Meaning	Action	Likely Cause
Pr01	Recoverable	Indoor Unit Pipe Sensor Fault	Repair	Faulty Sensor
Pr02	Recoverable	Outdoor Unit Pipe Sensor Fault	Repair	Faulty Sensor
Pr03	Recoverable	Indoor Unit Freezing	Investigate	Dirty Filter or Set Temp Low
Pr04	Recoverable	Overload Condition in Cooling	Investigate	Outdoor Unit Obstructed
Pr05	Recoverable	Outdoor Discharge Sensor Fault	Repair	Faulty Sensor
Pr06	Recoverable	Indoor Unit Air Sensor Fault	Repair	Faulty Sensor
Pr08	Recoverable	Indoor Unit Overheating	Investigate	Dirty Filter or Set Temp High
Pr11	Recoverable	Drain Pump Struggling to Cope	Investigate	Partially Blocked Drains
Eo00	Critical	Comms Fail Indoor to Control	Repair	Broken Cable or Interference
Eo03	Critical	Electrical Phase Problem	Repair	Power Supply Problem
Er04	Critical	High Pressure Switch Trip	Repair	Safety Device Tripped
Er05	Critical	Low Pressure Switch Trip	Repair	Safety Device Tripped
Er06	Critical	High Discharge Temperature	Repair	Safety Device Tripped
Er07	Critical	Overcurrent Protection Tripped	Repair	Safety Device Tripped
Er08	Critical	Comms Fail Indoor to Outdoor	Repair	Broken Cable or Interference
Er11	Critical	Drainage Failure	Repair	Blocked Drains
Er12	Critical	Electric Heater Overheat	Repair	Safety Device Tripped

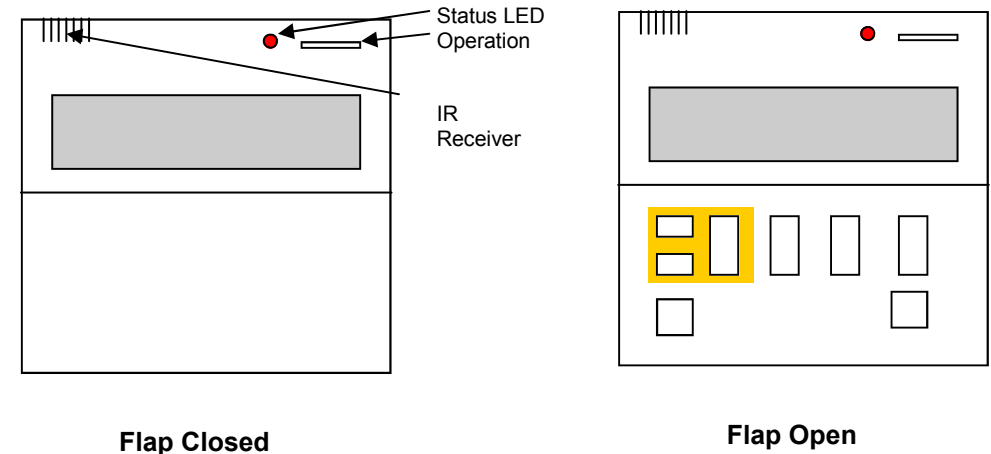
Explanation of Actions

- Investigate—Non Critical Failure Requiring Investigation by an engineer
- Repair—Critical Failure Requiring Investigation by an engineer

In the case of a Pr03 or Pr08 failure investigate yourself by checking the condition of the filter and cleaning if necessary. Prolonged operation in cooling with a set temperature below 21C or heating above 26C can also cause these conditions.

In case of a Pr04 failure investigate yourself whether the outdoor unit airflow is obstructed.

General Description



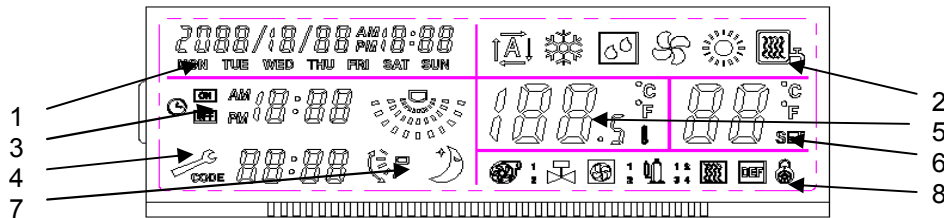
The controller has a Backlit Liquid Crystal Display Section, Status LED and Operation Switch mounted on the top half. The lower half is covered by a swing open flap.

Opening the flap reveals the control buttons. These are used to operate the unit. The buttons with a yellow border control the timer operation and the others control the units other functions.

Please Ensure -

- Do not operate the controller with wet hands
- Do not press multiple buttons simultaneously
- Do not press the buttons with sharp objects
- Ensure the Correct Button is Pressed
- Ensure all settings are in accordance with the Units User Manual
- Do not get the controller wet

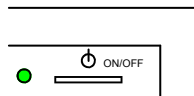
Display Section



Display Segments

1. **Clock Area**—Displaying the date, time and day of the week
2. **Mode Display**—Showing your choice of Automatic, Cooling, Dry, Fan Only and Heating Modes
3. **Timer Area**—Displaying the next Timer Occurrence and whether the unit will turn On or Off at this time. If this is not displayed then the unit is not in Timer Mode
4. **Error Code Display Area**—This displays any applicable error conditions
5. **Temperature Display Area**—This displays the Temperature as measured by the unit
6. **Set Temperature Display Area**—This displays the temperature the unit is trying to achieve
7. **Fan and Louver Display Area**—This shows the current fan setting and whether the swing louver is operational.
8. **Output Device Display Area**—This shows which output devices are operational. These include water pump, reversing valve, outdoor fan motor, compressor, electric heater and defrost. It also displays whether the keyboard lock has been set.

Operation Switch & Status LED



Located at the top right hand corner of the controller is the Operation Switch and a single Display LED. The LED will glow red if the unit is off and green if it is running. Pressing the operation switch will turn the unit on or off manually. If the unit is in timer mode then the timer display section will change when this is done to show when this will regain control of the unit.

Caring for the Environment

We all have a responsibility to care for the environment and the way you use your Highcool air conditioner can help by reducing energy consumption. The following recommendations will all help to keep the energy consumed by your Highcool system to a minimum.

- Use the time clock to operate your unit only when it is needed.
- If not using the time clock remember to switch the unit off when a room is unoccupied.
- Choose the operation mode best suited to the season. Cooling mode in summer will prevent the heating coming on while Heating mode in winter will prevent unnecessary cooling. Use automatic mode only during intermediate periods when both heating and cooling are required.
- Set the temperature to a realistic level and leave it there. Between 22 & 24C is our recommendation. Setting abnormally high or low temperature settings will increase energy consumption and may cause erroneous operation. Making frequent changes to the set temperature will likewise increase energy consumption with little appreciable difference to comfort.
- Make sure the air inlet and outlet of both indoor and outdoor units are clean and free from anything that might block the air-flow.
- Check & Clean the indoor unit air filters regularly as shown in the Operation and Maintenance Manual.
- If there is another form of heating in the room ensure it is not operating if the air conditioner is in cooling, dry or automatic modes.
- If another form of heating is available in the room but your Highcool system is able to heat the room sufficiently on its own then turn the other heating system off. Your Highcool system is more efficient than almost all other forms of heating. Only use additional heating if the capacity of your unit is not sufficient on its own.
- If you lose this manual or require a spare, copies are available to download at highcool.co.uk. Reading these on your computer rather than printing them will save ink and paper.
- Ensure your Highcool air conditioner is serviced regularly by a qualified and trained engineer. We recommend taking out a service contract with the company that installed it for you in the first place.

Advanced Settings

Remote Start & Stop

YES/NO

It is possible to provide the unit with a remote over ride switch to turn the unit on or off remotely using a central time clock or switch. Check with your installer whether this has been done and for future reference make a note above if this is the case.

It is still possible to operate the unit using the time clock on the unit while this function is operating but the remote switch will always take priority over any local setting.

Temporary Start / Stop

If the unit is operating in time clock mode then pressing the OPERATION button will temporarily advance the operation. The unit will stop if it is running or start if it is off. The Timer Display will change to the next on or off period and at this time will resume time clock operation.

Temporary Timer

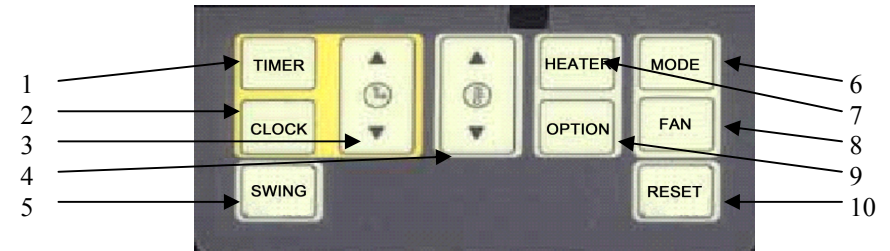
Pressing TIMER when not in time clock mode will allow a temporary on or off time to be set. This is set in a similar manner to setting the time clock and once the time is set pressing RESET will allow the unit to function under this temporary setting. Alternatively pressing TIMER will cancel the temporary timer setting and pressing it again will resume time clock operation.

Service Engineers

Pressing OPTION will allow you to interrogate the various temperature sensors in the indoor and outdoor unit by scrolling through them using the TEMPERATURE UP & DOWN buttons. The sensor reference is shown in the Error Display Segment. PC01 is the indoor unit air temperature sensor, PC02 is the indoor pipe temperature sensor, PC04 is not used and always shows 0, PC05 is the outdoor coil temperature sensor and PC07 the compressor discharge sensor.

Pressing and holding OPTION will allow you to enter Engineer Setup mode. Details are available in the Service Manual. Parameters in the Engineer Setup mode should only be changed by suitably qualified personnel with a copy of the Service Manual to hand. If you enter Engineer Setup mode by mistake press RESET to leave without changing any important system parameters.

Control Buttons



Opening the panel on the front of the controller reveals the controller buttons which allow you to control the functions of the air conditioner. In brief this page describes their main functions.

1. **Timer**—Pressing this button turns the timer function on and off. Pressing and holding with the unit off allows the timer to be set.
2. **Clock**—Pressing and holding with the unit off allows the date, time and day of the week to be set.
3. **Time Up & Down**—These can be used to set the time in Clock Set or Timer Set modes.
4. **Temperature Up & Down**—These can be used to increase or decrease the set temperature.
5. **Swing**—This is used to enable or disable the swing louver
6. **Mode**—This is used to switch between operating modes. You can use this to select Automatic, Cooling Only, Heating Only, Dehumidification or Fan Only operation for your air conditioner.
7. **Heater**—This function is used to control an optional electric heater element if one is fitted. Your Highcool air conditioner does not include this device but uses the outdoor unit to generate heat in heating mode.
8. **Fan**—This is used to set the fan speed and pressing it will scroll between low, medium, high and automatic fan speeds.
9. **Option**—Pressing this allows the user to use the temperature up & down buttons to interrogate the various temperature sensors in the indoor and outdoor units.
10. **Reset**—This can be used when you are in any programming mode to return to standard operational mode. Pressing and holding this button allows the keyboard lock to be set.

Understanding the Display

2000/10/08 AM 10:00
MON TUE WED THU FRI SAT SUN

The Clock Area shows the Date, Time and Day of the week.

Pressing and holding the CLOCK button with the unit off allows these parameters to be scrolled through and changed using the TIME UP & DOWN buttons to increase and decrease the setting and the CLOCK button to scroll to the next function. After setting the date, time and day of the week press RESET to leave the programming mode.



The Mode Area shows which mode the unit is currently set to work in. This is set using the MODE button on the controller.



Automatic mode allows the unit to automatically select heating or cooling in order to maintain the desired room temperature. For your comfort we recommend setting the temperature to between 22 & 24C in automatic mode.



Cooling Mode allows cooling to be used to prevent the room temperature exceeding the set temperature during summertime use. For your comfort we recommend not setting the desired temperature below 22C in cooling mode.



Dry or Dehumidification Mode uses the units cooling function to reduce the humidity in the room. It is designed to make the room comfortable with reduced energy consumption compared with cooling mode.



Fan Only Mode uses the indoor fan to generate air movement within the room but without cooling or heating the room. It is often used to prevent a room getting 'stuffy'



Heating Mode allows heating to be used to prevent the room temperature dropping below the set temperature during winter use. For your comfort we recommend not setting the temperature above 24C in heating mode.

What do you want the unit to do?

Pressing the mode button scrolls between automatic, cooling, dry, fan only and heating modes. Choose the mode most appropriate to your needs.

- Automatic will engage whichever mode is necessary to maintain the set temperature
- Cooling will cool the room down to the set temperature
- Dry will remove moisture and cool the room down.
- Fan Only will give air movement in the room without heating and cooling
- Heating will heat the room up to the set temperature

Note—the unit will only be able to reach the set temperature if it is powerful enough to do so. Your air conditioner is not designed to cool a room down to 20C or less for long periods or heat it up to 25C or more for long periods and, depending upon the heating or cooling requirements of your room may be unable to do so at all.

Setting the Set Temperature

Use TEMPERATURE UP & DOWN to increase or decrease the set temperature to the required level. We recommend between 22C & 24C for an optimum comfort level.

Setting the Auto Swing Louver

Press SWING while the unit is operating to start or stop this function.

Setting the Indoor Fan Speed

Press FAN while the unit is running to increase or decrease the indoor fan speed or choose automatic fan speed to let the unit choose the most appropriate.

Setting the Keyboard Lock

Press and hold RESET for six seconds to turn the keyboard lock on and off.

Getting Started



Setting the Time, Date & Day of the Week

1. Press and hold CLOCK until a beep is heard
2. One of the segments of the Time Display will flash
3. Use TIME UP & DOWN to set that segment
4. Use CLOCK to scroll to the next segment
5. Use RESET to finish when the time, date and day of the week have been set.

Setting the Time Clock

Each day has a start time, stop time and whether the time clock is active for that day of the week. The time clock is only activated if a start or stop time is shown in the Timer Display segment of the LCD Display. This must be done with the unit off.

1. Press and hold TIMER until a beep is heard
2. The Timer Display will be shown as well as a day of the week and a large ON or OFF. One of the segments will flash.
3. Use TEMPERATURE UP & DOWN to set whether the unit will run that day or not.
4. Use TIME UP & DOWN to change the flashing segment to the desired setting.
5. Use TIMER to scroll to the next segment
6. When the day of the week changes go back to step 3
7. When each day has a start and stop time and has been set to on or off press RESET

Typical settings are 8.00am start and 5.00pm stop with Monday to Friday set to ON and Saturday and Sunday set to OFF.

Enabling or Disabling the Time Clock

If a start or stop time is shown in the Timer Display section the time clock is active. If it is not then it is inactive. Press TIMER to enable or disable the time clock.

Operating the System Manually

1. Ensure the time clock is disabled by pressing TIMER if there is a start or stop time displayed in the Timer Display LCD section.
2. Press OPERATION (ON/OFF in the top right hand corner of the controller) to switch the unit on or off.
3. If the unit is on then the display LED will glow green. If it is off then it will glow red.

The Timer Area is only lit during timer operation and shows the time when the timer will next turn the unit on or off. If the unit is in timer operation and the OPERATION button is pressed then the timer area will advance to the next applicable setting as the OPERATION button over rides the current setting.

Setting the timer can only be carried out when the unit is off. Press and hold the TIMER button. You can then set a start and stop time for every day of the week using the TIME UP & DOWN buttons to increase or decrease the time and the TIMER button to scroll between the settings. For every day of the week you can select the unit to either run or not. Use the TEMPERATURE UP & DOWN buttons to scroll between ON and OFF for that day of the week. Press RESET to leave programming mode.

If you wish to operate the unit manually without time clock operation press the TIMER button until there is no display in the Timer Area. To resume press the TIMER button to show the Timer Area.



The Error Code Display Area is lit when there is a fault which must be rectified. Depending upon the nature of the fault the unit may continue to operate or shut down.

On seeing an Error Code you should immediately inform your service engineer and give them the fault code. An explanation of these fault codes are shown in the appendix of this manual.



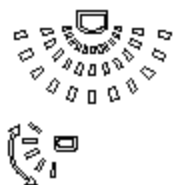
The Temperature Display Area shows the temperature of the room as measured at the units Air Inlet.

Pressing the OPTION button allows the temperatures of the other temperature sensors to be displayed here using the TEMPERATURE UP & DOWN buttons to scroll through them. The sensor reference is shown in the Error Code Display Area. Press RESET to leave this mode.



The Set Temperature Display Area shows the temperature the unit is set to achieve when operating. This temperature can be increased or decreased using the TEMPERATURE UP & DOWN buttons.

In order to achieve the best results we recommend that a setting of between 22C and 24C will give the best results in terms of room comfort. Constant changes in set temperature will not give better comfort but will increase energy consumption. Operating the unit with an abnormally low set temperature in cooling or abnormally high set temperature in heating for extended periods may also cause erroneous operation.



The Fan & Louver Display Area shows the fan speed and also whether the automatic swing louver is operational.

To start or stop the swing louver mechanism press the SWING button. All four louvers operate simultaneously and can not be controlled individually. This function can only be set when the unit is running.

To change the fan speed press the FAN button when the unit is running. This will scroll between high, medium, low and automatic fan speeds.




Swing Louver Low Fan Speed Medium Fan Speed High Fan Speed


Automatic Fan Speed is shown by the display continually changing from low to medium to high fan speed.


In order to prevent malfunction it is strongly recommended not to use the low or medium fan speed settings when using the unit in cooling or automatic modes with a set temperature below 21C or in heating or automatic modes above 25C. Under certain conditions the units internal controls may over ride the fan speed selected by the user.





The Output Device Display Area is designed to show which of your systems internal components are operating at that moment in time, except for the Indoor Fan and Swing Louver which are shown separately in the Fan & Louver Display Area. It can also display if the keyboard lock is set.


 The Internal Drain Pump is used to remove condensate water produced during cooling, automatic and dry modes from the indoor unit.


 The Reversing Valve is used to reverse the flow of refrigerant in order to allow the unit to heat instead of cool. This is lit in heating mode.

 The Outdoor Fan is used to reject heat from the room in cooling or dry modes or collect heat from outside in heating mode.

 The compressor is used to pump refrigerant around the system to allow the unit to heat or cool. It is located in the outdoor unit.

 The electric heat symbol is used to show when an optional electric heater device is energised. Your Highcool unit does not have this heater and if it is displayed you can cancel it using the HEATER button. It has no effect on your unit.

 The Defrost Symbol shows when the unit is in heating but has stopped to melt any ice formed on the outdoor heat exchanger. This will happen from time to time to allow the system to operate efficiently.

 The Keyboard Lock is used to prevent unauthorised access to the controller. When it is lit none of the keys on the controller can be used. This allows the operator to set the units operating mode and start / stop times then prevent others from interfering with the operation of the system. It is enabled or disabled by pressing and holding the RESET button for six seconds.